



### Elephants, Ivory, Economics, Ethics

The year is 1970. You are traveling through the Tanzanian bush with a fellow slave and two AK-47's in search of an "m'zay" (a large male elephant with a huge set of tusks) (5). If you do not succeed in killing an elephant and gathering its tusks, your master is going to be very unhappy; that is the last thing either of you want. After two days of tracking you finally find your mark. A gigantic old bull is about a hundred feet in front of you uprooting a tree with ease in order to eat the plants on the branches. As the two of you creep closer and closer the elephant looks up to inspect the rustling of bushes and plants against your bodies. Right when this seemingly peaceful creature makes eye contact with you, both you and your companion replace the sounds of birds singing and monkey's howling with the explosive sound of two machine guns. You and your partner have successfully killed an "m'zay" and will now cut off the elephant's tusks and flee the scene; your owner will be temporarily satisfied.

The story above was very common through out much of the 20<sup>th</sup> century in both Africa and Asia. Elephant poaching was (and still is) very familiar to many poor, rural individuals in these continents due to the increasingly high demand for the commodity ivory. My aim for this paper is to analyze the ivory trade along with the consequences that this trade has had on elephant populations. In order to fully understand the situation I will first discuss the history of ivory as a commodity. I will then discuss ivory's most plentiful current source, the elephant. Most importantly I will discuss both the economics behind this trade and the ethics of this trade. This paper will mainly address the question of whether or not it is okay to kill elephants in order to obtain the valued commodity ivory. Since this issue is very complex I will examine it from multiple perspectives. Hopefully by the end of this paper one will be able to both understand the conflicting viewpoints in this debate and make an educated decision for themselves on the issue of ivory as a commodity.

"Ivory is dentin, an essential component of teeth" (7-15). This tough and resilient tissue is (currently) only found in significant amounts on: elephants, hippopotamus, walrus, narwhals and various pigs (7-16). Furthermore, elephants provide the only

source of “true ivory;” the other animals supply only smaller amounts of “lesser ivories” (7-16). Ivory is composed of “tiny dentinal structures surrounded by a meshwork of collagen, whose gelatinous quality contributes to its carvability and polish” (7-16). This commodity has been valued as a treasure through out much of human existence for many reasons: it is both beautifully colored and scarce, it feels good to the touch (it absorbs sweat), and it has the ability to be finely carved or inscribed on (7-4).

The oldest evidence of humans manipulating ivory through symbolic expression dates back some 35,000 years (7-10). This prehistoric ivory carving found in Germany represents its own source: a woolly mammoth (7-10). As one can guess, this human manipulation of ivory was not unique in anyway. Through out history, almost every single human culture has made use of this “white gold” in some way or another (7). Whether these cultures obtained the ivory from animals themselves or through trade with other cultures, it is clear that the ivory addiction was and still is a universal phenomenon. In fact, ivory has been used to make everything from religious objects and symbolic artwork to sharp hunting tools and Paleolithic sex toys (7-15). More recently ivory has been used in mass amounts to make both piano keys and billiard balls (7). It is most important to note that in the last century or two ivory has transgressed from a handcrafted artistic production for only the wealthy and powerful into a mass produced “middle-class luxury material” (7-83). This evidence is clear when one examines the statistics of legal raw ivory exports; in 1979 total volume of African raw ivory exports was 949,752 (kg) where as, in 1988 this figure increased exponentially to 7,954,544 (kg) (2). One must wonder: where did all of this ivory come from?

Elephants provide the answer. And the population reductions in this species bear the consequences of human’s increased obsession with ivory. There are currently three species of elephants: the Asian elephant (*Elephas Maximus*), the African savannah elephant (*Loxodonta Africana Africana*), and the African forest elephant (*Loxodonta Africana Cyclotis*) (1). Of these species, the African savannah elephant has received the largest blow from the ivory trade; it is also the largest of the three species and therefore carries the largest tusks (2- 3). To make this “elephantacide” real I will provide a few statistics: between 1925 and 1969 approximately 500,000-600,000 elephants were harvested for their ivory (2-28), between 1970-1977, over 100,000 elephants were killed

annually (5), lastly, African elephant populations fell from 1,340,000 in 1979, to 720,000 in 1987, to 637,000 in mid-1989 (2-105) .

The elephant's drastic population reduction reveals the unfortunate fact that an elephant is inevitably killed when its tusks are taken from it. Although it is possible to cut off an elephant's tusks when it's alive it is not practical for many reasons: the costs are higher because tranquilizers are more expensive than left over military weapons, it involves a longer, harder and more complex process, and it leaves an elephant in much pain and takes away both its primary defense mechanism and a useful tool (4). The major players in the exporting of ivory are Tanzania, Kenya, Uganda, Sudan and Zambia; not surprisingly, the major importers are the United States, Europe, Japan and China (2). Now that we get the gist of the consequences this ivory trade has had on elephant populations lets quickly discuss elephants as a species.


Every well-studied elephant researcher will say the same thing; elephants are clearly sentient beings (they can perceive subjectively) (4). Researchers emphasize the complex lifestyles and sentience of elephants by observing them act intelligently and display an array of emotions similar to humans. For example, the matriarch (Babylon) of one clan (Biblical Towns) makes sure that her herd moves slowly and always waits for the young female (Babel) who was crippled as an adolescent and can't keep up (5). Researchers have also observed situations in which older family members rumble at and caress youngster elephants when they display signs of distress (1). Furthermore, elephants display both greeting and grieving ceremonies in their appropriate situations. Beyond just displaying emotions, elephants also demonstrate their incredible memories by seeking out old water holes in the midst of deserts and droughts. Elephants depend upon the intricate memory of the matriarch to find these essential water sources for daily hydration in order to survive during harsh times (5). Overall it is clear that elephants are complex, intelligent and sentient creatures (4).

Elephants are valuable as a species for a multitude of reasons. Unfortunately elephants are best known to our marketplace because they supply ivory. Along with supplying ivory elephants also: help keep ecosystems in balance (by modifying their environments in ways that can be beneficial to other plants and animals), fertilize the landscape, provide food for carnivores, provide research subjects for conservation efforts,



and lastly, elephants are a major tourist attraction (they are one of Africa's "big 5") (2-1). On the other hand, elephants also have some economic costs; they destroy rural crops, consume vast amounts of vegetation (which can deplete ecosystems relatively quickly) and many times they are the source of land use conflicts with economic projects (2-1). It is important to examine all of the attributes that elephants bring to the table when discussing the economics of elephants and ivory.

Viewing an animal, such as an elephant, from a purely economic perspective can provide valuable information because humans have treated these creatures as mere commodities for the vast majority of our time on this planet. As economists we believe that all people behave rationally and have preferences (it is clear that people have large preferences for ivory). It is also true that in certain cases preferences can change due to certain incentives (positive or negative). Furthermore, these preferences do vary from person to person and, on a larger scale, from culture to culture. From an economic perspective alone, ivory can be seen as a high demand commodity with an undersupplied source; in other words it is a scarce good. The fact that the source is a living creature doesn't seem to matter to too many people because elephants often aren't accepted as members of our "society" and therefore have no (or very few) freedoms or rights.


Although, in 1989 when CITES passed the trade ban on ivory it seemed that  elephants gained a huge right or freedom that could ultimately help save the species from being killed solely for the commodity ivory (4). The implication of this trade ban greatly increased the elephant's chances of long-term survival and coexistence with humans. This trade ban also signified that many humans began to view these animals in a more ethical and equal manner. Currently the elephant trade ban is in practice around the world to help grow and sustain healthy elephant populations so that we can benefit from these creatures as living beings rather than ivory products. This trade ban has reduced poaching but has not nearly eliminated it: "The African Elephant population has decreased from about 1.2 million in 1981 to approximately 770,000 in 1988 to about 620,000 in 1995, largely as a result of poaching to supply the international ivory trade" (4). Since the trade ban was introduced in 1989 it has clearly not been completely successful in stopping elephant poaching.

Economically this trade ban also implies some unfortunate externalities. When elephant populations grow too large, as is currently happening in certain reserves, they have to be “culled” (5). This means that many elephants have to be killed in certain reserves where they are over exploiting their resources and growing at unsustainable rates. Culling (or killing) elephants is legitimized in this case because if they were not culled than their populations wouldn’t last nearly as long and ecosystems could potentially collapse too quickly. When these elephants are culled, wildlife reserves are left over with mass amounts of stock piled ivory (4). (Reserves get this ivory from both culled elephants and elephants that die of natural causes). Under the trade ban wildlife reserves are not allowed to sell this ivory or do anything with it so they simply collect and store it (and let it degrade over time) (4). Simultaneously, the trade ban obviously has the affect of reducing ivory’s overall market supply and raising its demand. This means that people are willing to pay higher prices for the increasingly scarce commodity; these extremely high prices can actually encourage more poaching because the profit margin is much larger to poachers (4).


Many argue that if a controlled ivory trade was practiced (as opposed to the current complete trade ban), poaching would be discouraged more effectively (4). If wildlife reserves were allowed to sell surplus ivory (as opposed to letting it degrade and lose value while also paying for its storage and non-use), than the supply of ivory in the market place would increase substantially and the price of ivory would therefore decrease (4). Poaching would not be as profitable because this increased ivory supply would reduce the returns to poaching; if the cost of poaching was high enough and the returns were low enough less people would take part in the illegal activity (4). Furthermore, if reserves were allowed to sell their surplus ivory, they could increase their profits considerably. The surplus ivory profits could even be used to benefit the local communities that many times bear the burden of elephant populations in terms of crop loss. This ivory profit could also allow wildlife reserves to buy more land for conservation; with increased profits and more land these reserves could hire more labor to protect against poaching. Ultimately, allowing for a controlled ivory trade could potentially benefit elephant populations, wildlife reserves and even humans living near elephant populations (4). On the other hand there also exist valid arguments for keeping


the ivory trade ban exactly as it (currently) is. Those in favor of the complete ivory trade ban argue that the demand for ivory is at a remarkable low due to the illegality of its trade (4). Allowing for controlled ivory trade, some argue, would simply renew interest and spark large increases in ivory demand (4). Furthermore, if the renewed interest in ivory caused demand to increase by a lot, poaching would once again be encouraged (4). In this case more elephants would end up dying and nothing would be accomplished in terms of elephant conservation. Before we get further enveloped in the consequences of the ivory trade ban it is essential to note specifically who is involved in the trade and how these groups are involved.

It is important to view the dilemma of elephants and ivory from the perspectives of various groups (members of society) affected by this trade so that we can understand the benefits, costs and ethics of the ivory trade more clearly. Some of the groups affected by the ivory trade include poachers and ivory traders, ivory consumers, ivory artists, conservation groups, scientists, the tourism industry, and rural humans (farmers) living within close contact to elephant populations. Although all of these groups view the ivory trade in a different light, they can still be broken down into either benefiting or losing from the ivory trade. Beneficiaries of the trade include poachers, ivory traders, ivory consumers, ivory artists and farmers whose crops can be destroyed or eaten by elephants. These groups all receive net benefits and sometimes even depend on this ivory trade to prosper economically. One must question if the marginal benefit to these beneficiaries is worth an elephants life. At the same time an economist must also analyze the welfare loss to conservation groups, scientists, the tourism industry and animal lovers caused by the death of an elephant. In a perfect world we would be able to calculate the exact benefits and losses and then decide the correct response; since we currently have a ban on the ivory trade I think it's safe to assume (judging by the law) that an elephant's life is not worth the ivory it could provide (largely due to the elephants status as an endangered/threatened species).

Because (under the law) elephants are currently more valuable to society alive as opposed to dead, it seems that humans receive an overall net benefit from the existence of  elephants on this planet. Therefore, from an economic perspective we want to make sure that they sustain themselves as a population for as long as possible. The fact that we have

economic interests in these creatures actually helps ensure their survival (even if that means they will only exist for tourism and ivory sales).

Economically it might also make sense to privatize elephant populations in a more efficient way than is currently in place. If these populations were no longer common property goods, owners would have an incentive to make sure their populations stay large, healthy and most importantly, sustainable. In the majority of the 20<sup>th</sup> century elephants were over exploited to a large degree because they were a common property good (they were killed at unsustainable rates). Like any common property good, one always has an incentive to over consume because if they don't somebody else will. As a common property good, nobody had to pay the correct cost for poaching. Overall, if we wanted to achieve economic efficiency we would allow ownership of elephant populations. 


All of this seems harmonious economically, but in real life there are more important things to many people than efficiency and profit. The pursuit of efficiency can be considered a moral principle; but many consider other issues such as an animals own rights or conservation to be more important than efficiency. The morality of killing elephants is a complex issue that can be viewed in many different lights. The main reason that a moralistic view differs from an economic perspective is because an animal's interests often matter in a moralistic view but sometimes they don't economically. I think it's safe to assume that all elephants have an interest in staying alive rather than being slaughtered by left over military weapons. Although elephants may not consciously worry about getting killed or the consequences of dying (when they are not in any real danger), this animal, along with all others would still rather be alive than dead if given the choice. We know this because all animals have some sort of defense against attack; if animals did not value life over death than there would be no point in trying to stay alive, reproduce or raise youngsters. Furthermore, one can make the argument that there is no "defect" that is possessed by elephants that is not also possessed by some group of human beings (3). We would never shoot impaired humans for their organs that might be valued by other healthy individuals. But we would kill a healthy, mentally sane elephant for a commodity. s seems questionable to many people. Moral approaches are important


because they are open to the fact that elephants themselves have non-tradable interests similar to humans (3).

The ethics of killing elephants involves two essential components: the nature of the elephant's death (how it was killed) and the reason for its death. It is most important to distinguish between killing an elephant for food or subsistence, killing an elephant for its own future survival/sustainability and killing an elephant for an ornament. The vast majority of ethical approaches would all agree that a human killing an elephant (or any other animal for that matter) in order to survive is perfectly fine in a last resort situation. Similarly, many moral approaches would also agree that it is not unethical to cull elephants in order to ensure the future survival of their populations. Both of these instances are ethical to many because they are last resort efforts in order to ensure the future life of either a human or elephant populations in general. On the other hand, many (but not all) ethical approaches would condemn the killing of an elephant for the valued commodity ivory. There are a multitude of different arguments one could make in calling the ivory trade unethical. For some, killing any animal for anything other than subsistence (food or even clothing if completely necessary) is unethical because it is unnecessary; humans do not depend on the consumption of the elastic commodity ivory. For others, the killing of any animal in this day and age is unethical because other food sources are available. Vegans would definitely oppose the death of an elephant for ivory. Lastly, some people would oppose the killing of an elephant for ivory simply because they thought an elephant's life was more valuable than the ivory. Many people agree that it is completely ethical for humans to use ivory in artistic ways as long as it is not at the expense of the animal's life; ivory can be taken from elephants after they die of non-human related deaths. Furthermore, it is also ethically important to make sure that if an elephant has to be killed, it is done in a way that is quick, painless and causes little suffering.

One distinct moral approach is utilitarianism. A utilitarian judges the ethics of an action on the basis of its consequences (6). Therefore a utilitarian would judge the ethics of the ivory trade on the basis of two factors; the two consequences of the ivory trade are obviously, the loss of an elephant's life vs. the gains to humans in the form of ivory. A utilitarian could include non-tradable factors such as the existence of one more elephant



or the happiness an elephant receives from being alive in their overall analysis. Under the utilitarian view, each different person can determine for themselves whether or not the life of an elephant is worth roughly 70-80 kg of ivory (2-28). Furthermore, a utilitarian would argue that whatever increases happiness is good and whatever increases pain and suffering is not (6). In the case of elephants and ivory it is clear that the ivory trade increases happiness for the humans selling and buying ivory. On the other hand, it causes the ultimate sacrifice of an elephant's life and upsets many conservationists, researchers, and animal lovers. If a utilitarian chose to view elephants as beings with rights equal to humans, they would most likely oppose the ivory trade; it would be hard to justify human happiness when the consequence of that happiness is the loss of a sentient beings life.  The difficulty with this view as well as some other moral perspectives is that it would be very hard, if not impossible to add up all of the benefits and all of the costs in order to make a justified decision on whether the consequences of the ivory trade are good or bad.

A second moral perspective that could be used to judge the ethics of the ivory trade is the "Rights Theory." This theory assumes that an action is good, right or moral if one has a "right" to do it (6). According to this theory if one poached an elephant tomorrow in order to obtain ivory they would be acting unethically because they do not have a right to do so. The reason they do not have a right to do so is because the ivory trade was made illegal in 1989 under the Convention on International Trade in Endangered Species (5). However, the "Rights Theory" approach implies ambiguous results because prior to the 1989 trade ban, the ivory trade was not illegal and many  people assumed that they did have a right to kill elephants. Ultimately, it is hard to determine exactly what we do and do not have a right to do; judging by the law, illegally poaching an elephant is wrong and unethical.

The third and last moral philosophy I will examine is the "Natural Law Theory." This theory assumes that an action is moral or good if it is natural, and bad or unethical if it is unnatural (6). This view is also very ambiguous because it begs the question of what is natural. If we view the actions of our non-human primate ancestors as determinants in what is natural for humans, than killing elephants for ivory is unethical because we don't see any other non-human primates killing for "treasures" (7). Also, the only reason humans discovered ivory was because they were either hunting for or scavenging

mammoths as a food source (7). Obviously our early ancestors took a liking to ivory, but evidence suggests that they never killed animals for ivory alone; rather, it was a bonus on top of the meat that they needed to survive (7). Does this make the ivory trade unnatural? One could also view this naturalistic approach from the opposite side of the spectrum and say that since humans are natural beings, anything we do must be natural. Under this light, killing an elephant for ivory is perfectly natural because humans have done (and will continue to do) it; basically anything goes from this perspective. Like many of these ethical approaches, the “Natural Law Theory” also provides ambiguous results as to whether or not it is morally acceptable to kill elephants for ivory.

The complex situation regarding an elephant’s role on this planet is intricate, delicate, and overwhelming. Some groups of people like poachers and ivory traders obviously benefit from the (illegal) ivory trade and slaughter of elephants. On the other hand, many different groups receive considerable utility losses from this trade and slaughter. It is also ethically important to focus on this issue from an elephant’s perspective; should a wild elephant have a right to not be killed by humans for its ivory simply because it is a sentient being? The situation gets even more complex when one adds variables such as land or habitat conservation; in some cases elephants exist in a symbiotic relationship with the environment and in other cases they rapidly deplete ecosystems. It is important to consider all of the economic, moral and scientific aspects regarding an elephant’s existence when deciding how to handle this wild creature. It is also essential to distinguish between the different reasons for killing elephants; a distinction must be made between killing an elephant for ivory and killing it for other more respectable reasons. However, the bottom line is that since 1989 we have made it clear that we must keep elephant populations at sustainable amounts and designate significant portions of land in order to allow this creature to coexist with humans for as long as possible. (One must also keep in mind that extinction is a natural and inevitable process for all living creatures including ourselves.)

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1a: Ian Saron was my editor. He did a good job and offered some valid points. He told me my intro paragraph was unnecessary (but I kept it anyway because I liked it). He also told me to focus more on how this ivory trade questions the underlying aspects of economics. Along with that he offered several grammatical corrections and overall he helped me develop my main points more clearly. I recommend a 10/10 for his editing job.

1b: Ian continues to be a good editor. He helped a lot with structuring/organizing my paragraphs more effectively and gave me a number of grammatical pointers. He also helped me a lot on the ethical arguments I was making. He suggested a cut down my paper's size a bit and take out some unnecessary aspects of it.